Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of:	
Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems	ET Docket No. 00-258

To the Commission:

COMMENTS OF WORLDCOM, INC.

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SUMMARY

WorldCom, Inc. ("WorldCom") hereby submits these Comments in response to the above-captioned Notice of Proposed Rulemaking ("the *NPRM*") concerning the possible use of frequency bands below 3 GHz to support the introduction of third generation ("3G") wireless services. WorldCom has a vital interest in this proceeding -- having recently invested over $1 billion for the rights to use MMDS/ITFS spectrum[1] in 160 markets throughout the United States in order to provide advanced *fixed* wireless broadband services. WorldCom and other MMDS providers are deploying these services and will be providing the first or the first competitive broadband "pipe" to millions of consumers in areas unserved and underserved by other broadband technologies. WorldCom alone plans to deploy broadband services in 30 markets, including many smaller markets with nearby rural populations, by year end 2001. In so doing, WorldCom is fulfilling the vision of Section 706 of the Telecommunications Act of 1996, which requires the Commission to "encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to *all* Americans. . . ."[2]

WorldCom's substantial investment in MMDS has been made in reliance on several recent Commission actions, which were intended to promote the use of the MMDS/ITFS bands for advanced two-way fixed broadband services. Moreover, many of the rights that MMDS operators have to use the MMDS/ITFS bands were obtained at an FCC auction less than five years ago and it would be unprecedented to displace these operations and reauction the same

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[1] Together with the 2150-2160/2162 MHz band, the 2500-2690 MHz band forms the Multichannel Multipoint Distribution Service ("MMDS") and the Instructional Television Fixed Service ("ITFS") frequency bands (also referred to herein as the "2.5 GHz band").

[2] 47 U.S.C. § 157 note (emphasis added).

spectrum rights. The Commission must not modify its well-reasoned spectrum management plans for the 2.5 GHz band by displacing or disrupting one advanced wireless service being deployed today -- MMDS/ITFS -- in favor of another planned wireless service -- 3G -- that is not yet being deployed and that could not operate in this spectrum band for many years to come. On the eve of the delivery of new competitive broadband MMDS/ITFS services to the public, the Commission must avoid taking any regulatory action that would delay or disrupt the provision of such needed services, especially to the many smaller markets and surrounding rural areas that currently have limited or no alternatives for obtaining a broadband connection to the Internet.

MMDS/ITFS licensees must have access to *all* of the spectrum allocated to these services in order to provide technically and economically viable services, especially to those areas currently unserved or underserved by other broadband technologies. Any reduction in spectrum, or displacement of licensees, would delay the provision of such services to the public and could cripple the MMDS/ITFS industries. This is especially the case for many smaller markets where population densities only will support the introduction of two-way broadband services through the use of a single cell (also called a supercell) deployment of all available MMDS/ITFS channels. MMDS/ITFS licensees are already constrained in their use of the MMDS/ITFS frequencies by incumbent users and geographic considerations. Further constraints in the form of band segmentation would make two-way MMDS/ITFS service uneconomic in most markets.

The reallocation of MMDS/ITFS spectrum also would cause significant disruption to the services offered by the ITFS community – services which have been provided, in some cases, for over 30 years with immeasurable public interest and educational benefits. MMDS and ITFS licensees have developed a supportive symbiotic relationship over the years

and it is highly unlikely that ITFS facilities will be upgraded to offer digital broadband services without the continued support of the MMDS industry.

As the largest reseller of mobile services in the United States, WorldCom understands the potential benefits of 3G services. However, these services should not be promoted at the expense of broadband two-way fixed offerings being introduced today in the MMDS/ITFS frequency bands. There is ample spectrum available for deploying 3G services – including new spectrum identified by the Commission in the *NPRM* as well as existing cellular and PCS spectrum.

Moreover, global harmonization of 3G spectrum is not an adequate justification for displacing MMDS/ITFS licensees. **First**, global harmonization is unlikely to be a reality – something the Commission acknowledges in the *NPRM* – because countries around the world are allocating different spectrum bands for 3G services. **Second**, any reallocation of the MMDS/ITFS band would not serve global harmonization because many countries, including most of the larger nations in the Americas, do not intend to use this spectrum for 3G service. **Third**, not even regional harmonization in the Americas would be furthered by designating the MMDS/ITFS band for 3G services. To the contrary, Canada, Mexico, Brazil and other countries in Latin America are deploying MMDS systems in the 2.5 GHz band. In any event, it is likely that multi-band 3G devices will be able to facilitate global roaming in spite of disjointed 3G spectrum allocations around the world.

Band segmentation is not a feasible option because it would be extremely inefficient from a spectrum management standpoint and because it would result in MMDS/ITFS licensees having an inadequate amount of spectrum to conduct operations and remain economically viable. Nor can 3G services share the same spectrum with MMDS/ITFS systems

due to mutual interference problems. For similar reasons, WorldCom has serious concerns about creating a flexible allocation for the MMDS/ITFS band. WorldCom intends to deploy fixed broadband wireless services in this band, and its ability to offer mobile services would not result in increased flexibility since mobile and fixed services cannot share spectrum in the same geographic area. To the contrary, if any other licensees were to deploy mobile services in portions of the MMDS/ITFS band, they would significantly complicate the already difficult coordination process, and inevitably disrupt the deployment of two-way broadband wireless services. Indeed, a flexible allocation approach would magnify the difficulties of coordination in an already extremely complex band sharing environment.

Moving MMDS/ITFS licensees to another frequency band is also not feasible for several reasons. **First**, suitable replacement spectrum has not been identified. **Second**, the costs that would be incurred by relocating a mass-market service like MMDS, including the disruptions to existing customer relationships, cannot be compensated for. There is no precedent for a forced relocation of an emerging mass-market service, and for good reason: it is not possible to compensate MMDS/ITFS licensees for all of the disruptions and loss of business that would be caused by such a relocation.

Two-way digital broadband fixed services are being deployed throughout the United States today, and it is not fair, or in the public interest, at this late date to change the rules under which MMDS/ITFS spectrum was acquired, and investment decisions made, in order to accommodate a new service that under the best of circumstances could not be deployed in the same spectrum for many years to come. Any decision to relocate MMDS/ITFS licensees would cause the spectrum essentially to lie fallow during the lengthy relocation period.

Prolonged Commission consideration of various spectrum options for the MMDS/ITFS band, which include taking away MMDS/ITFS spectrum, will have a negative impact on the industry by creating regulatory uncertainty that delays the development and manufacture of lower cost and more advanced two-way digital MMDS/ITFS equipment and the delivery of new services to the public. The Commission must act swiftly so as to remove this uncertainty and not change the allocations in the MMDS/ITFS band.

Rather than trying to choose one advanced wireless service over another, the Commission has the ability to accommodate both MMDS/ITFS and 3G services – a choice that makes sense economically and as a matter of public policy. The Commission has identified ample spectrum outside of the MMDS/ITFS frequency band to meet the needs of 3G service providers. By using this spectrum, the Commission can preserve its earlier and well-reasoned spectrum management plans for the MMDS/ITFS frequency bands while advancing its stated objective to bring new 3G services to the public.

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To the Commission:

COMMENTS OF WORLDCOM, INC.

WorldCom, Inc. ("WorldCom") hereby submits these Comments in response to the Commission's Notice of Proposed Rulemaking concerning the possible use of frequency bands below 3 GHz to support the introduction of third generation ("3G") mobile wireless systems.[1] WorldCom has a vital interest in this proceeding, as one of the largest holders of spectrum rights in the MMDS/ITFS band throughout the United States.[2] WorldCom and other MMDS providers are deploying advanced *fixed* wireless broadband services in this band and will be providing the first or the first competitive broadband "pipe" to millions of consumers in areas unserved and underserved by other broadband technologies.

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[1] *See Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems et al.*, Notice of Proposed Rulemaking and Order, FCC 00-455 (rel. Jan. 5, 2001) ("*NPRM*").

[2] WorldCom also has an interest in this proceeding as the largest reseller of mobile services in the United States.

The MMDS industry has already invested billions of dollars to develop two-way fixed wireless broadband services in the MMDS/ITFS band. On the eve of delivery of these new competitive broadband services to the public and fulfillment of the vision of Section 706 of the Telecom Act of 1996 to "encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to *all* Americans. . . ,"[3] the Commission must not take any regulatory action that would delay or disrupt the provision of such needed services, especially to the many smaller markets and surrounding rural areas that currently have limited or no alternatives for obtaining a broadband connection to the Internet.

I. THE COMMISSION'S WELL-REASONED SPECTRUM POLICIES FOR THE MMDS/ITFS BAND MUST NOT AND NEED NOT BE DISCARDED IN ORDER TO FACILITATE THE DEVELOPMENT OF 3G SERVICES

WorldCom and other MMDS/ITFS licensees have relied upon, and are rapidly implementing, the Commission's carefully crafted spectrum management plans for the MMDS/ITFS band, which include the recent decisions implementing service rules for digital two-way broadband fixed wireless services. These plans were developed after an extensive notice and comment period where all interested parties were given an opportunity to participate in the Commission's rulemaking processes.

The Commission must not now modify these well-reasoned spectrum management plans by displacing or disrupting one advanced wireless service being deployed today -- MMDS/ITFS -- in favor of another wireless service -- 3G -- that is not yet being deployed. Such action would be unwise as a matter of public policy and set a bad precedent,

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[3] 47 U.S.C. § 157 note (emphasis added).

especially when many of the rights to use this spectrum were obtained at a recent FCC auction. Nor is it necessary for the Commission to make such a Hobson's Choice in this proceeding. If the Commission determines that mobile operators require additional spectrum, there is ample spectrum available to satisfy such requirements without taking spectrum away from MMDS/ITFS licensees. Furthermore, MMDS/ITFS broadband deployment is taking place now, while 3G services could not possibly be offered in the MMDS/ITFS bands for many years.

In the *NPRM*, the Commission sought comment on various options for accommodating 3G services. Many of these options do not directly affect the MMDS/ITFS spectrum, such as identifying new spectrum in the 1.7 – 1.8 GHz band for 3G services. WorldCom's comments will focus on those options that would directly affect the advanced broadband fixed wireless business, including: (1) band segmentation/sharing of the MMDS/ITFS spectrum with 3G services; and (2) relocation of MMDS/ITFS incumbents to accommodate 3G services. These options must not be adopted for the reasons set forth below. Indeed, other options, which do not involve the taking away of any spectrum rights granted to MMDS/ITFS licensees, provide ample new spectrum for carriers contemplating 3G services. As for the Commission's proposal for a "flexible allocation" for MMDS/ITFS spectrum, WorldCom is seriously concerned that such a new allocation would make frequency coordination in the band nearly impossible, create severe marketplace uncertainty, and inevitably result in a devastating disruption and delay of the current plans of MMDS manufacturers and operators to develop new equipment for, and deploy new advanced systems and services in, the MMDS/ITFS band.

A. MMDS/ITFS Licensees Are Providing, and Will Provide, Advanced Wireless Services Throughout the United States, Especially to Unserved and Underserved Consumers

In the *NPRM*, the Commission has proposed exploring the possible use of frequency bands below 3 GHz in order to "support the introduction of new advanced wireless services" like 3G.[4] *The Commission, however, must not lose sight of the fact that the two-way digital broadband services that are now being deployed in the MMDS/ITFS bands are advanced wireless services as well.* Indeed, these digital broadband services help fulfill one of the principle goals of the Telecommunications Act of 1996: to "encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to *all* Americans. . . ."[5] Just over two years ago, the Commission stated with respect to the MMDS/ITFS band that:

> The [two-way] rules we adopt today will also provide significant benefits to consumers. A new, competitive group of players will now enter the market for high speed two-way communications service. Both individual and business consumers will be able to use the high-speed and high-capacity data transmission and Internet service that will be available through the new systems. Also, consumers will be able to take advantage of new video-conferencing, distance learning and continuing education opportunities.[6]

Many of these individuals and business customers are located in markets currently unserved or underserved by other broadband technologies. Indeed, WorldCom plans to deploy

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[4] *NPRM* at ¶ 1 ("[W]e explore the possible use of frequency bands below 3 GHz to support the introduction of new advanced wireless services. . . .").

[5] 47 U.S.C. § 157 note (emphasis added).

[6] *See Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-Way Transmissions*, 13 FCC Rcd. 19112, 19116 (1998) ("*Two Way Order*"), recon., 14 FCC Rcd. 12764 (1999), further recon., FCC 00-244 (rel. July 21, 2000).

such services to many smaller markets, and WorldCom will provide significant coverage of surrounding rural areas. These prospective customers are not now, and may never be, served by DSL or cable modem providers due to economic and/or technical reasons. As the Commission recognized in the *Interim Report*, fixed two-way MMDS will bridge this gap:

> Indeed, in rural or otherwise underserved markets in the country, ITFS/MDS may be the sole provider of broadband service. . . . The growth of ITFS/MDS two-way service is intended to provide affordable service to those market sectors that are more likely to be underserved and provide a competitive choice to consumers in more urban and more affluent markets.[7]

The attached coverage maps (see Attachments 1 and 2) showing expected DSL and MMDS coverage in Jackson, Mississippi and Dothan, Alabama -- markets in which WorldCom has deployed or plans to deploy broadband wireless service -- illustrate the dramatic degree to which these two-way broadband wireless services will provide the first or second broadband "pipe" to unserved and underserved areas. The smaller circles represent the maximum DSL coverage in each market while the larger circles represent anticipated MMDS two-way broadband coverage.[8] The expanded reach of MMDS supercell coverage clearly offers

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[7] *FCC Interim Report: Spectrum Study of the 2500 – 2690 MHz Band* at 22 - 23 (rel. Nov. 15, 2000) ("*FCC Interim Report*"). *See also id.* at 23 ("In its *Second Report on the Availability of High-Speed and Advanced Telecommunications Services*, the Commission identified rural Americans, particularly those remote from major population centers, as being particularly vulnerable to not receiving access to advanced telecommunications services in a reasonable and timely basis.").

[8] The MMDS coverage is assumed to be between the 20 and 35 mile radii circles from each supercell transmitter site. DSL coverage is assumed to be an 18,000 foot radius from each central office. This is clearly a best case assumption since many central offices are not yet equipped for DSL, and DSL service is typically limited to customers within 18,000 copper feet of a central office. Cable modem service is not depicted on these coverage maps because WorldCom was unable to obtain any reliable data on current or future availability of such service in these markets.

many areas in these markets (previously not served, or underserved, by other broadband technologies) with advanced two-way broadband service. The attached coverage maps also demonstrate that MMDS providers also will bring needed broadband competition to many more areas in and around these markets. Indeed, two-way MMDS broadband service should significantly spur competition with the broadband services being offered by cable modem and DSL providers – a result, as the Commission recognizes, that is clearly in the public interest.[9]

WorldCom and other MMDS providers are deploying two-way broadband services today in many markets and have aggressive rollout schedules. WorldCom has MMDS licenses and MMDS/ITFS spectrum rights covering more than 31 million households (approximately 30% of all U.S. households) which equates to approximately 80 million people across the United States. When the Commission opened its first two-way filing window in August 2000, WorldCom filed over 380 applications to provide two-way service in more than 60 markets – many of which are mid-sized and smaller markets in terms of population.[10] WorldCom is currently providing commercial fixed wireless broadband services in Jackson, MS; Baton Rouge, LA; and Memphis, TN. WorldCom plans to provide service in 30 markets by year-end 2001, including such markets as Chattanooga, TN; Springfield, MA; Norfolk, VA; Buffalo, NY; Bakersfield, CA; and Charleston, WV.

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[9] *See FCC Interim Report* at ii ("These systems offer a significant opportunity for further competition with cable and digital subscriber line (DSL) services in the provision of broadband services in urban and rural areas."); *id.* at 22 ("Nationwide deployment of MDS systems will provide Americans with another option for high-speed access. . . .").

[10] Some of the middle-sized and smaller markets for which WorldCom filed applications include Montgomery, AL; Dothan, AL; Fort Walton, FL; Panama City, FL; Pensacola, FL; Tallahassee, FL; Lafayette, LA; Monroe, LA; Birmingham, AL; Rochester, NY; and Dayton, OH.

Other MMDS operators are also moving forward rapidly too. Sprint Corporation ("Sprint") has also invested over $1 billion in MMDS spectrum rights, and has already rolled out commercial fixed wireless broadband service in twelve markets, including Phoenix, Tucson, Colorado Springs and Houston. In the recent filing window, Sprint filed applications to provide two-way service in 45 markets. In addition, Nucentrix Broadband Networks, Inc. ("Nucentrix"), the third largest MMDS operator, filed applications for 70 markets in Texas and the midwest.

Substantial growth is projected for fixed wireless broadband services in the next 3-5 years. In a very recent study released by the Strategis Group, it is predicted that there will be a residential "broadband market of 36 million subscribers in 2005, surpassing dial-up access."[11] The study further predicts annual revenues for this market to grow to almost $10 billion during this same time period.[12] Of this market, the Strategis Group expects close to five million residential fixed wireless subscribers.[13] WorldCom estimates that there will be over 500,000 additional small and medium sized business customers served by MMDS operators by 2005. This is consistent with the Commission's observations in its *Interim Report*:

> Available evidence indicates that over the next several years the demand for affordable broadband services in the United States will

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[11] "High Speed Access to Pass Dial-Up in 2005," CyberAtlas at http://cyberatlas.internet.com/markets/broadband/article (Feb. 8, 2001) ("Fixed wireless and two-way satellite technologies have begun to be deployed in several cities around the country. These technologies are expected to play a fill-in role where cable modem and DSL services are not available, and in some cases, compete directly with those technologies."); "Residential High-Speed Internet: Cable Modems, DSL, and Fixed Wireless," The Strategis Group at 7 (January 2001) ("*Strategis Group Study*") ("From 1.88 million in 1999, high-speed Internet households are forecast to reach 35.86 million by 2005, a compound annual growth rate of more than 63%.").

[12] *Id.* at 8.

[13] *Id.*

> far outpace the ability of incumbent local exchange carriers and cable operators to provide those services.[14]

The influx of major MMDS equipment manufacturers, including Nortel Networks, Cisco Systems and ADC Telecommunications, validates these observations and projections.

B. The Planned Deployment of 3G Services is not an Alternative to the Current Deployment of Two-Way Fixed Wireless Broadband Services by MMDS Providers

The planned deployment of 3G services will in no manner be an adequate substitute for the current deployment of advanced two-way fixed wireless broadband services being offered by MMDS providers. Advanced broadband MMDS services are being provided at high data rates to all consumers over a wide geographic area. In contrast, 3G services are being designed, and will almost exclusively be used, for mobile applications with much lower average data rates.

Nor can it reasonably be expected that 3G services will be deployed any time soon in spectrum where incumbent commercial users must be relocated. A significant amount of time would be needed to negotiate with and/or relocate incumbents, create service rules, and auction spectrum rights, even before there could be any real investment in 3G equipment and infrastructure for new mobile spectrum. MMDS advanced services, on the other hand, are being deployed today in many markets around the country with many fixed wireless carriers having aggressive rollout plans.

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[14] *FCC Interim Report* at 21. As noted by the Commission, last year's Strategis Group study "predicts there will be 1.2 million residential and 300,000 business MDS broadband subscribers by 2003." *FCC Interim Report* at 21 n.26 (citing *U.S. Wireless Broadband: LMDS, MMDS and Unlicensed Spectrum*, Peter Jarich and James Mendelson, The Strategis Group Inc., Feb. 17, 2000).

Furthermore, past history and market realities suggest that even when deployed, 3G services will be provided first in the largest urban markets, and service to smaller markets and the surrounding rural areas will be provided much later, if at all.[15] Indeed, the results of the recently completed C and F block auctions reveal that the bulk of available funds for new mobile services is likely to go into the ten or fifteen largest markets in the country.[16] In contrast, many MMDS providers are focusing their attention on mid-sized and smaller markets which include surrounding rural areas, that have few, if any, broadband service alternatives.

Moreover, unlike 3G services, MMDS will be a significant competitive spur to DSL and cable modem services, which can be expected to move faster to deploy, or where deployed, to upgrade service and/or reduce prices to compete with a new entrant. Because of the much lower average data rates for 3G services and the expected concentration by mobile carriers

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[15] *See* "Next Generation of Cellphones Becomes Murky," *Wall Street Journal* at B1 (Feb. 21, 2001) (stating that European 3G licensees obtained their 3G licenses because they "needed the extra airwave capacity. . .offered by 3G licenses, because 2G networks are becoming saturated."). *See also id.* at B4 (quoting France Telecom's chief executive of its wireless unit as stating that 3G licenses "will principally give us capacity in zones where we have saturated the frequency.").

[16] An analyst reviewing the results of the C and F block auctions was quoted as stating: "In this auction, most of the money is in a small number of large markets." "FCC Auction of Wireless Licenses Raises a Record $17 Billion So Far," *Wall Street Journal* at B5 (Jan. 25, 2001). In fact, about 60% of the total net winning bids went for the top nine available markets, with over one half of that amount going for the three New York City licenses. *See* http://www.fcc.gov/wtb/auctions.c_f_blk/35press2.pdf; "Big Companies Win Airwave Bids," *New York Times* at C4 (Jan. 25, 2001) ("As it now stands, Verizon will win the most licenses, but at a heavy cost. Its two licenses in New York City, for example, will cost a total of more than $4 billion. The high bid for a third license in New York, almost $1.5 billion, has been submitted by Alaska Native Wireless. . . ."). The average auction prices paid per person per MHz was considerably higher in the larger markets. For example, in markets with over 2.5 million people, the price per person per MHz was $6.04, as compared to $3.50 in markets of 750,000 – 2.5 million people and $1.47 for markets under 750,000 people. *See* "Spectrum Auction is Over," Investment Report of Raymond James and Associates (Jan. 29, 2001).

on the largest markets, 3G services will not provide such a competitive spur to broadband competition.[17]

The recent struggles of competitive local exchange carriers ("CLECs"), including data local exchange carriers ("DLECs"), to compete with the DSL broadband offerings of incumbent local exchange carriers ("ILECs") reveals how difficult it is to provide competitive broadband service without actually owning the underlying facilities.[18] MMDS two-way service offers the unique opportunity for broadband service providers not affiliated with the local telephone or cable companies to provide a *facilities-based, last mile broadband service* in competition with DSL and cable modem services.

C. Reallocating MMDS/ITFS Spectrum or Relocating MMDS/ITFS Users to Promote 3G Services would Amount to Taking Away of Spectrum Rights Obtained at an FCC Auction and would Establish a Dangerous Precedent

The reallocation of any MMDS/ITFS spectrum to mobile services, which unquestionably cannot share the band with incumbent fixed users, or the forced relocation of MMDS/ITFS licensees would establish a dangerous precedent for the Commission, and not be in the public interest. If it were to mandate such reallocation and/or relocation, the Commission would seriously diminish the exclusive rights that were acquired by MMDS licensees at auction,

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[17] This is especially true for mobile carriers such as Verizon, Cingular (jointly owned by SBC and BellSouth) and AT&T Wireless who are already providing either DSL or cable modem services in many markets and would not want to compete against themselves.

[18] *See* "Cable Maintains Data Lead But Bells Are Making Strong Gains," *Communications Daily* at 1 (Feb. 6, 2001) ("But DLECs, plagued by financial problems, have largely dropped out of high-speed data race. . . . As group, . . .DLECs added only 131,700 DSL customers in 4th quarter, compared with 534,000 for Bells and estimated one million or so for cable operators.").

or even render them a nullity. As a result of the Commission's auction of MMDS/ITFS spectrum less than five years ago, including the rights to MDS channels 1 and 2, auction winners were granted a set of *exclusive* rights, including: (1) the *exclusive* right to apply for authority to construct and operate new MMDS facilities within each BTA;[19] (2) the *exclusive* right to provide service within the PSA of an MMDS incumbent whose license has been forfeited;[20] (3) the *exclusive* right to apply for authority to construct and operate a commercial station on ITFS channels, under certain circumstances;[21] and (4) the right for their licenses to be renewed as long as the licensee is capable of "demonstrating substantial service during the license term and compliance with applicable Commission rules, policies and the Communications Act."[22]

WorldCom and others have invested billions of dollars in reliance on these rights that were auctioned by the Commission. As indicated above, these rights included more than simply access to the MMDS channels in each BTA that were not already licensed to other operators. It is this bundle or package of spectrum rights that were bargained for *and* purchased by WorldCom and others in anticipation of offering advanced broadband fixed wireless services. Therefore, it would be incorrect to assume, as some might argue, that certain ITFS channels

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[19] *See* 47 C.F.R. §21.903(b).

[20] *See* 47 C.F.R. §21.932(c).

[21] *See Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service and Implementation of Section 309(j) of the Communications Act – Competitive Bidding,* Report and Order, 10 FCC Rcd 9589, 9612 (1995).

[22] *Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service and Implementation of Section 309(j) of the Communications Act – Competitive Bidding,* Memorandum and Order on Reconsideration, 10 FCC Rcd. 13821, 13822 (1995).

could be taken back by the Commission or reallocated without infringing on the rights of MMDS auction winners. For the Commission now to limit the scope of these exclusive rights, or eliminate them altogether, would diminish the Commission's ability to conduct future spectrum auctions and curtail the development of new telecommunications services.

A reallocation of any of the MMDS or ITFS spectrum would also be contrary to the Commission's rulemaking and licensing processes for MMDS/ITFS licensees. In reliance on the Commission's well-reasoned spectrum management policies for the MMDS/ITFS band, WorldCom, and other MMDS licensees, invested billions of dollars to obtain spectrum rights in order to bring fixed broadband services to consumers. This investment includes not only the ownership of rights to MMDS channels, but also the extensive lease arrangements in place for gaining access to many of the ITFS channels in each market.[23] The leasing arrangements with ITFS licensees are extensive and MMDS providers relied on their ability to maintain these arrangements when they bid on spectrum at auction. A decision now to reallocate any portion of the MMDS/ITFS frequency band clearly would be inconsistent with the Commission's prior rulemaking, policy and licensing actions.

A reallocation of any portion of the MMDS/ITFS spectrum or relocation of any MMDS/ITFS licensees is also wholly inconsistent with the Commission's *Secondary Spectrum Market Policy Statement* and corresponding *Secondary Markets NPRM*.[24] MMDS and ITFS

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[23] *See Two Way Order*, 13 FCC Rcd. 19112 (1998), *recon.*, 14 FCC Rcd. 12764 (1999), *further recon.*, FCC 00-244 (rel. July 21, 2000).

[24] *See In the Matter of Principles for Promoting the Efficient Use of Spectrum by Encouraging the Development of Secondary Markets*, FCC 00-401 (rel. Dec. 1, 2000) ("*Policy Statement*"); *In the Matter of Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets*, FCC 00-402 (rel. Nov. 27, 2000) ("*Secondary Markets NPRM*").

licensees have been sharing spectrum through long-term lease arrangements for many years in order to more efficiently use available channels in the 2.5 GHz band. The Commission has long recognized that these leasing arrangements are an effective means to ensure the efficient use of spectrum and promote the educational benefits of ITFS.[25] Indeed, the Commission has touted these relationships and spectrum efficiencies in its Secondary Markets proceeding:

> We have also revised our rules in ways that have facilitated the operation of secondary markets. By way of example, . . .we revised technical rules that permitted greater opportunities for ITFS licensees to lease capacity to commercial operators, thereby giving ITFS licensees more flexibility to achieve their educational objectives. . . . As a result, ITFS and MDS entities typically operate in symbiotic relationships, with commercial MDS operators providing funding to ITFS licensees for their educational mission in exchange for the leasing of extra channel capacity needed to make commercial fixed wireless MDS/ITFS systems viable.[26]

The Commission further noted in its *Policy Statement*:

> We continue to believe that an effective way to make unused spectrum held by existing licensees available to others may be through secondary markets. An effectively functioning system of secondary markets would encourage licensees to be more spectrum efficient by freely trading their rights to unused spectrum capacity, either leasing it temporarily, or on a longer-term basis, or selling their rights to unused frequencies.[27]

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[25] *See Amendment of Parts 2, 21, 74 and 94 of the Commission's Rules and Regulations In Regard to Frequency Allocation to the Instructional Television Fixed Service, Multipoint Distribution Service and Private Operational Fixed Microwave Services*, 94 F.C.C.2d 1203, 1250 (1983) ("substantial benefits to the public may be derived from allowing ITFS licensees to use excess channel capacity either by directly utilizing it themselves or through leasing it to others").

[26] *Secondary Markets NPRM* at ¶ 86.

[27] *Policy Statement* at ¶12. *See also id.* at ¶ 20 ("Licensees should generally have clearly defined usage rights to their spectrum, including frequency bands, service areas, and license

(continued...)

With increased flexibility given to MMDS/ITFS licensees in 1998 to provide two-way digital fixed broadband services in the 2.5 GHz band, the Commission facilitated even greater use of this spectrum to serve educational communities and provide high-speed Internet access to unserved and underserved areas. A reallocation of any portion of MMDS/ITFS spectrum would undercut the "usage rights" in spectrum of these licensees, and the corresponding long term leasing relationships cited favorably by the Commission in its Secondary Markets proceeding. In this regard, WorldCom notes Commissioner Furchtgott-Roth's expressed concern that a reallocation of MMDS/ITFS spectrum would seriously undercut the value of a FCC license:

> One of the bands is where FCC licensees are currently allocated and currently operating. It is very surprising to me and I am quite sure it is surprising to those licensees that the FCC will be conducting a study about the viability of creating entire new services in a spectrum band which they currently have a license to. What's going to happen to them? Does this give them any confidence the license they hold has any value? Does this give them any confidence that the agency goes around talking about secondary markets that they are serious about it?[28]

As Commissioner Furchtgott-Roth observes, reallocating MMDS/ITFS spectrum, especially after licensees have invested billions of dollars in reliance on the Commission's decisions, undermines

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terms of sufficient length, with reasonable renewal expectancy, to encourage investment."); *id.* at n.28 ("In this context, any transferees *and lessees* will have the same rights to protection against interference and incursions by other operators as the licensee from which they acquire the spectrum.").

[28] *RCR Wireless News* at 46 (Nov. 20, 2000).

the value of these licenses and what licensees can expect to do with them – a result that is likely to stifle investment in existing and new telecommunications services.

Lastly, the Commission should not lose sight of the fact that a reallocation of any MMDS/ITFS spectrum would disrupt the invaluable educational benefits that ITFS licensees provide to the public. As many of the commenters to the CTIA Petition for Rulemaking in this proceeding made clear, the value of ITFS educational programming (analog, digital, and state-of-the-art interactive) is high, and any disruption to these benefits would not be in the public interest. Many ITFS licensees are also dependent on MMDS operators for technical and financial support for state-of-the-art distribution of educational programming. Set forth below are but three of scores of stories regarding successful partnerships that WorldCom has entered into with ITFS licensees across the country.

- In Minnesota, for almost three decades the professional community has benefited from the distance education program offered by the University of Minnesota over MMDS/ITFS frequencies. At 38 corporate sites, employees at 31 member companies participate in credit and non-credit courses that allow these employees to receive training and education that would otherwise be unavailable to them because of their work schedules. Recently, the University of Minnesota and WorldCom entered into an agreement in which WorldCom agreed to enhance the capacity of the University's ITFS system by converting it to digital technologies. As a result, the University can expect to be able to use two to four additional channels for its educational system.

- In California, the San Diego County Office of Education ("SDCOE") uses MMDS/ITFS frequencies to provide programming to 485,000 students in 500 schools in the county. Besides offering a wide array of educational programming for K-12 schools and community colleges, SDCOE's programming consists of County Board of Education meetings, Association of School Administrators meetings, "town meetings" by the Secretary of Education and other special requests. With the

financial and technical assistance of WorldCom, SDCOE was able to implement digital technologies that enhance the capacity of its ITFS system.

- In Virginia, channel WHRO in Norfolk has used MMDS/ITFS frequencies for seventeen years to transmit educational information and community awareness programming to the eastern Virginia seaport area. Because of WorldCom's financial and technical assistance, WHRO was able to increase its programming capacity as the result of digital conversion. The relationship with WorldCom provides WHRO with a steady revenue stream that allows it to upgrade facilities and purchase and develop programming.

D. WorldCom Needs *All of the Available MMDS/ITFS Spectrum* to Provide a Viable Two-Way Fixed Wireless Broadband Service and Therefore Band Segmentation is not Technically or Commercially Feasible

In order to provide an economically viable two-way fixed wireless broadband service, WorldCom needs all of the available MMDS/ITFS spectrum in virtually all of the markets that it intends to serve with advanced broadband services. This is especially the case for many smaller markets where population densities will only support the introduction of two-way broadband services through the use of a single cell (also called a supercell) architecture.

1. There are Already Significant Constraints on the Use of the 2.5 GHz Band

As the Commission recognized in its *Interim Report*,[29] MMDS/ITFS licensees are already significantly constrained in their use of the 2.1 GHz and 2.5 GHz bands, resulting in the

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[29] *See FCC Interim Report* at ii ("Incumbent ITFS and MDS use of the 2500-2690 MHz band varies from one geographic area to another. This lack of uniformity presents serious challenges to developing band sharing or segmentation options that could be used across the country without severely disrupting ITFS and MDS use. . . .ITFS and MDS are licensed with different authorized service or interference protection areas; extensive leasing arrangements exist between the two services; and flexible channel band plans for combined ITFS/MDS two-way (continued...)

availability of less than the 33 MDS, MMDS and ITFS channels allocated in each market. In many markets the use of certain channels is not possible because of co-frequency MMDS/ITFS operations in neighboring markets. This is especially the case where adjacent markets are relatively close together and the 35-mile protected service areas of each market overlap one another. In such situations, the available number of channels in each market will be reduced due to interference concerns.

Furthermore, in order to avoid self-interference from upstream and downstream transmissions in the MMDS/ITFS bands, it is necessary for operators to maintain up to 42 MHz (seven channels) of separation between the two transmission paths. Otherwise, the cost of filtering for customer premises equipment becomes excessive and commercially nonviable. This separation band typically will involve a different set of seven channels in different markets. Some MMDS operators plan on utilizing different upstream and downstream channel pairings within their CPE in any given market. This will enable the operator to provide two-way broadband service utilizing most of the channels within each separation band. WorldCom initially plans to use the separation band in most of its markets for high-power video and educational programming applications. As filtering technology advances and costs decline, WorldCom plans to convert channels in the separation band to use for upstream or downstream broadband transmissions.

There is also a need for guardband spectrum between the higher power video downstream channels and lower power data downstream channels in order to protect against

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systems will coexist with some incumbent one-way systems operating under the traditional channel band plan.").

adjacent channel intra-system and inter-system interference (brute force overload). In addition, there is a need for guardband channels separating the edges of the MMDS/ITFS bands from neighboring allocations to protect against inter-service interference. The total amount of this guardband spectrum could reach 12 - 18 MHz (two or three channels), and could be even more under some of the Commission's segmentation proposals.

In total, these real world constraints on the MMDS/ITFS bands will result in an average availability of 158 MHz (approximately 26 channels) for use by MMDS operators in most markets. Therefore, it is reasonable to use this amount of spectrum for any analysis of available spectrum in the MMDS/ITFS bands for the provision of advanced broadband services.

2. MMDS Operators Need All of the Available MMDS/ITFS Spectrum To Have a Viable Business, and Therefore, None of the Band Segmentation Options Proposed by the Commission Is a Viable Option for the MMDS Industry

HAI Consulting, Inc. ("HAI") has completed a comprehensive study of the MMDS/ITFS frequency bands demonstrating that the loss of 90 MHz of spectrum, as proposed in the Commission's various band segmentation options, would have a devastating impact on the commercial viability of fixed wireless broadband access systems in the MMDS/ITFS bands. A copy of that study is attached to the comments being filed by The Wireless Communications Association International, Inc. ("WCA") in this proceeding.[30] WorldCom participated in that study and provided data to HAI regarding its business plans and other relevant information.

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[30] "MDS/MMDS/ITFS Two-Way Fixed Wireless Broadband Service: Spectrum Requirements and Business Case Analysis," HAI Consulting, Inc. (February 22, 2001).